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TECHNICAL DATA SHEET

Date: 2018

Natura V/E inks

Foodstuff Packaging Printing Inks

General information

The Natura V/E inks series is a printing product solution for making foodstuff packaging.
This product range is suitable for printing on the non-food contact surface of primary and secondary foodstuff packaging requiring a low level of odour and migration.

Conventional vegetable-oil based Offset inks and varnishes comply with the following criteria:

1) Formulation and manufacture respecting the "EuPIA Guidelines on printing inks applied to the non-food contact surface of foodstuff packaging"[1].
2) Formulation that minimizes both potential migration through the substrate as well as the set-off of the external printed surface on the inner food-contact-surface during stacking or on the reel.

It must be noted that both set-off and migration are strongly dependant on the transformation conditions and the barrier properties of the substrate.

3) Manufacture according to the CEPE/EuPIA Guidelines "Good manufacturing practices for the production of inks used on the non-food contact surface of foodstuff packaging and on articles intended to be placed in contact with food".

In particular, **Natura V/E** inks do not contain:

- substances classified as carcinogenic, mutagenic or toxic for reproduction according to CLP Regulation (EC)N° 1272/2008. In particular, Natura V inks do not contain hydroquinone or cobalt salts.
- pigments which may themselves migrate (in particular Fanal pigments).
- mineral oils.

1. Available on the Website http://www.eupia.org/uploads/tx_edm/2011-11-14_EuPIA_Guideline_for_Food_Packaging_Inks_-_November_2011__corr_July_2012.pdf

Reminders:
Recommendations relating to the printing of foodstuff packaging

The design of the packaging is paramount to guarantee the conformity of foodstuff packaging with the Framework Regulation 1935/2004/EC.

This is why it is important to comply with the following:

- The substrate must be suitable for the printing of foodstuff packaging. In particular:
  - The nature of the substrate, and in particular its porosity, facilitates migration to a greater or lesser extent.
  - The substrate itself may contain potentially migrant chemical substances (for example, recycled paper and cardboard).
  - The substrate alone may cause change to the organoleptic properties of the packed foodstuff.
- The amount of potentially migrant substances is proportional to the ink load deposited. This is why we recommend "standard" OD or ink film weights. The maximum deposit must not exceed 2.0 g/m² and the risk of set-off must be controlled.
- The machine used must be kept clean and cleaned only with suitable auxiliary products (Natura cleaner) in order to avoid any contamination.
- Some applications may require the use of performance additives. The latter must also be compatible with foodstuff packaging printing conditions.
- The packaging compliance may be compromised if the storage conditions are not suitable (temperature, moisture, etc.).
- Article 17 of Regulation 1935/2004/EC requires complete traceability of the materials and objects. This in particular implies the traceability of all consumables used, the recording of the printing conditions and the identification of the final recipients.

Responsibility

Chemical products could be harmful. Consult MSDS and respect usage guidelines

Information and recommendations hereby mentioned are based on our practical experience and on analyses results obtained in specific laboratory conditions. Due to the variety of applications and conditions of use, they are communicated as indications and cannot be considered as any guarantee.

The packaging manufacturer and the packer are legally responsible for the properties of the foodstuff packaging and for its compliance with the legal requirements.

Compliance of the packaging (in particular with Article 3 of Regulation 1935/2004/EC) must be checked by the printer by means of representative analytical measurements (migration test and Robinson test). The Brancher company is committed to providing the relevant information (identification of the components whose migration must be evaluated), under a confidentiality agreement, to the printer, or to an external analysis laboratory, or even a third party involved in compliance control.

It is important to know the nature of the packed food as well as the design of the packaging (with an effective functional barrier or not). Knowledge of the nature of the packed element will make it possible to select the suitable protocol to carry out the migration tests (please refer to Regulation 10/2011/EC(1)) as well as pigments with particular resistance if necessary.

Table 1

List of food simulants

Food simulant	Abbreviation
Ethanol 10 % (v/v)	Food simulant A
Acetic acid 3 % (w/v)	Food simulant B
Ethanol 20 % (v/v)	Food simulant C
Ethanol 50 % (v/v)	Food simulant D1
Vegetable oil (*)	Food simulant D2
poly(2,6-diphenyl-p-phenylene oxide), particle size 60-80 mesh, pore size 200 nm	Food simulant E

(1) : http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:012:0001:0089:EN:PDF

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Natura V/E

Conventional Offset ink for foodstuff packaging printing
Vegetable oil based formulation

Performances

- **Low Odor**: Robinson test ~ 0,8
  (1 = very slightly perceptible odour or taste)
- **Low migration**
- **Mineral oil free formulation**
- Duct fresh
- High pigment concentration
- Very good stability on press
- **Process colors complies with ISO 2846-1 Standard**
  (meets the requirements of the 12647-2 Standard)

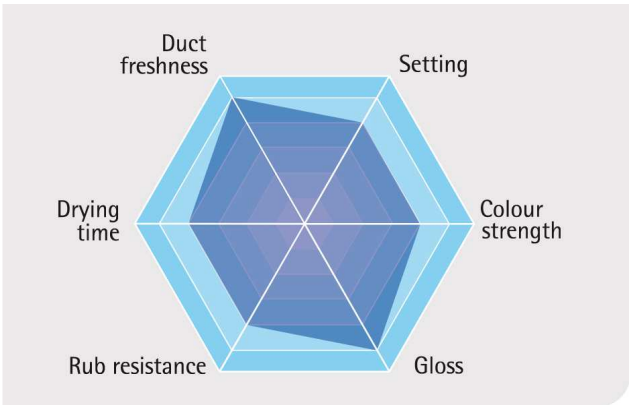
Substrates

Non coated	**
Matt coated	***
Gloss coated	***
Lightweight paper	**
Cardboard	***
Non absorbent substrates (1)	*
Synthetic substrates (2)	▲

*** Perfectly suitable,
** Suitable,
* Test necessary
▲ Not suitable

(1) Non absorbent substrates (tracing paper, coated chromo colour)
(2) Synthetics (PE, PP, PET, PVC)

Ink profil



Natura V/E Process Colours

		Solidités		
		Lumière ISO 2835	Alcool ISO 2837	Alcali ISO 2838
	Jaune Quadri NATURA V/E3443	5	+	+
	Rouge Quadri NATURA V/E3444	5	+	-
	Bleu Quadri NATURA V/E3445	8	+	+
	Noir Quadri NATURA V/E3446	8	-	+

Natura V Pantone®

	Fastness			
	Light ISO 2835	Alcohol ISO 2837	Alkali ISO 2838	Heat (°C, 10min)
Natura V Pantone® Yellow	5	+	+	180
Natura V Pantone® Yellow 012	5	+	+	150
Natura V Pantone® Orange 021	5	+	+	150
Light Fast Natura V Warm Red	5	+	+	150
Natura V Pantone® Red 032	6	+	+	150
Natura V Pantone® Rubine Red	5	+	-	180
Light Fast Natura Rhodamine	7	+	+	180
Light Fast Natura V Purple	7	+	+	180
Light Fast Natura V Violet	8	+	+	200
Light Fast Natura V Blue 072	8	+	+	200
Light Fast Natura V Reflex Blue	8	+	+	200
Natura V Pantone® Process Blue	8	+	+	200
Natura V Pantone® Green	8	+	+	200
Natura V Pantone® Mixing Black	8	+	+	200
Natura V Pantone® Transparent White	.	+	+	200
Other products				
Natura V Mixing Opaque White	8	+	+	200
Natura V Intense Black	8	+	+	200

Spot colours inks

Dayamix system®

Auxiliary Products

- Natura V Thinner
- Natura Cleaner

Packaging

Inks: 1 kg and 2.5 kg boxes.
Thinner and Cleaner: 5 L Jerrycans.

Recommandations

- **No direct ink-food contact**
- **Use only Natura auxiliary products (Natura Cleaner, Natura V Thinner)**
- **Prints can be wet-on-wet or wet-on-dry varnished with adapted products from the Overfix range of varnishes (*consult us*).**
- **An acrylic varnishing is recommended to avoid set off [1]**
- **Prints may be laminated [1] (recommended drying time before laminating: 24 to 48h)**
- **Series compatible with both alcohol and alcohol free fount solutions**
- **Series compatible with infrared (I.R.) drying: maximum stack temperature: 35°C on top and 30°C on reverse side**

[1] **the final packaging must be evaluated in order to ensure its compliance**

Chemical products could be harmful. Consult MSDS and respect usage guidelines

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